The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. **(previously presented)** A microfluidic reactor for trapping one or more particles of predetermined nominal size or range of sizes, comprising:

a flow inlet;

a transparent capillary for providing an in-situ zone for analysis; and

a porous filter integrated with the transparent capillary, the filter having a plurality of smaller capillaries each having internal cross-sectional dimensions smaller than the nominal size or range of sizes of the particles and arranged so that said smaller capillaries trap the particles in the analysis zone while a fluid flows from the flow inlet through the analysis zone and the filter.

2. **(original)** An apparatus as claimed in claim 1 wherein the filter extends laterally across the analysis zone.

3. **(original)** An apparatus as claimed in claim 1 wherein the flow inlet defines a flow axis and the filter intersects the flow axis so as to form a porous reaction chamber.

4. **(previously presented)** An apparatus as claimed in claim 3, wherein the holes of the porous reaction chamber are substantially hexagonal.

5. **(canceled)**

6. **(previously presented)** An apparatus as claimed in claim 1 wherein the plurality of smaller capillaries are substantially parallel.

7. **(previously presented)** An apparatus as claimed in claim 1 wherein the transparent capillary comprises at least one rectangular tube to form a planar surface.

8. **(original)** An apparatus as claimed in claim 1, wherein the transparent capillary is made from glass.

9. **(original)** An apparatus as claimed in claim 1, wherein the transparent capillary is made from a polymer.

10. **(original)** An apparatus as claimed in claim 1, wherein the transparent capillary is coated with a solvent resistance.

11. **(canceled)**

12. **(previously presented)** An apparatus as claimed in claim 1, wherein the smallest dimension of the transparent capillary is smaller than twice the smallest dimension of the particles being trapped.

13. **(original)** An apparatus as claimed in claim 1, further comprising a manipulation system for moving more than one microfluidic reactor in a high throughput bio-assay operation.

14. **(previously presented)** A microfluidic reactor for trapping one or more particles of predetermined nominal size or range of sizes, comprising:

an optical detector;

a flow inlet;

a transparent capillary for providing an in-situ detection zone wherein the detection zone is arranged so as substantially to correspond in shape to the optical detector; and

a porous filter integrated with the transparent capillary, the filter having a plurality of smaller capillaries each having internal cross-sectional dimensions smaller than the nominal size or range of sizes of the particles and arranged so that said smaller

capillaries trap the particles in the analysis zone while a fluid flows from the flow inlet through the analysis zone and the filter.

15. **(canceled)**

16. **(original)** The reactor of claim 14, wherein the optical detector comprises a charge-coupled device for detecting light coming from the reaction in the detection zone.

17. **(withdrawn)** A method for trapping one or more particles of predetermined nominal size or range of sizes, comprising the steps of:

providing a flow inlet;

providing an in-situ transparent analysis zone;

integrating a porous filter with the in-situ transparent analysis zone, the filter having a plurality of holes defined therein, the holes being smaller than the nominal size or range of sizes;

flowing a fluid from the flow inlet through the analysis zone; and

trapping the particles in the analysis zone while the fluid flows through filter.

18. **(withdrawn)** The method of claim 17, wherein the flowing step comprises reacting the fluid having an analyte with a probe immobilized on a plurality of particles.

19. **(withdrawn)** The method of claim 17, wherein the flowing step comprises flowing a fluid of whole blood cells.

20. **(withdrawn)** The method of claim 18 further comprising scanning the trapped particles for a visible result of the reaction in the detection zone.

21. **(previously presented)** An apparatus as claimed in claim 1 wherein the porous filter comprises a microstructured fiber.

22. **(previously presented)** An apparatus as claimed in claim 1 wherein the porous filter is fused to the interior walls of the transparent capillary.

23. **(previously presented)** An apparatus as claimed in claim 12 wherein the transparent capillary is dimensioned as to form a monolayer of trapped particles wherein the trapped particles are aligned in a serial fashion.